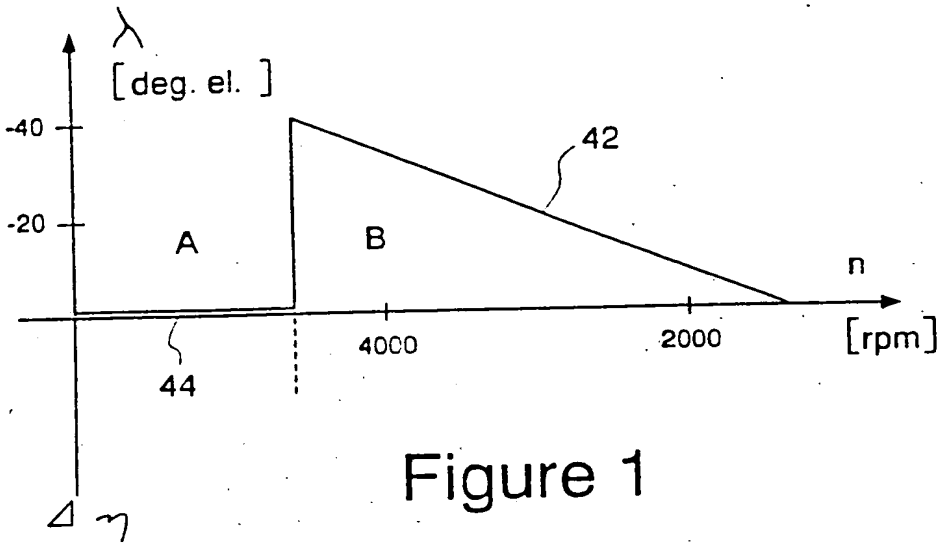


Figure 1

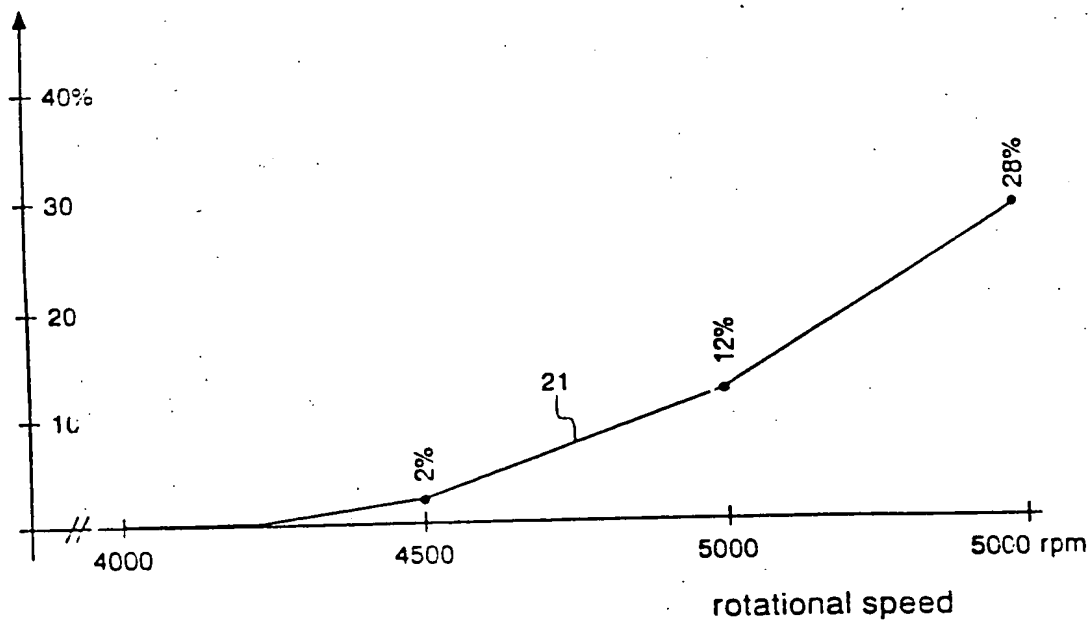


Figure 2a

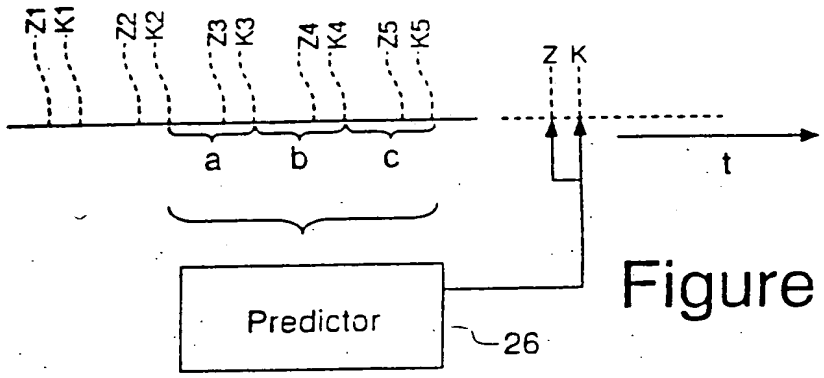


Figure 2b

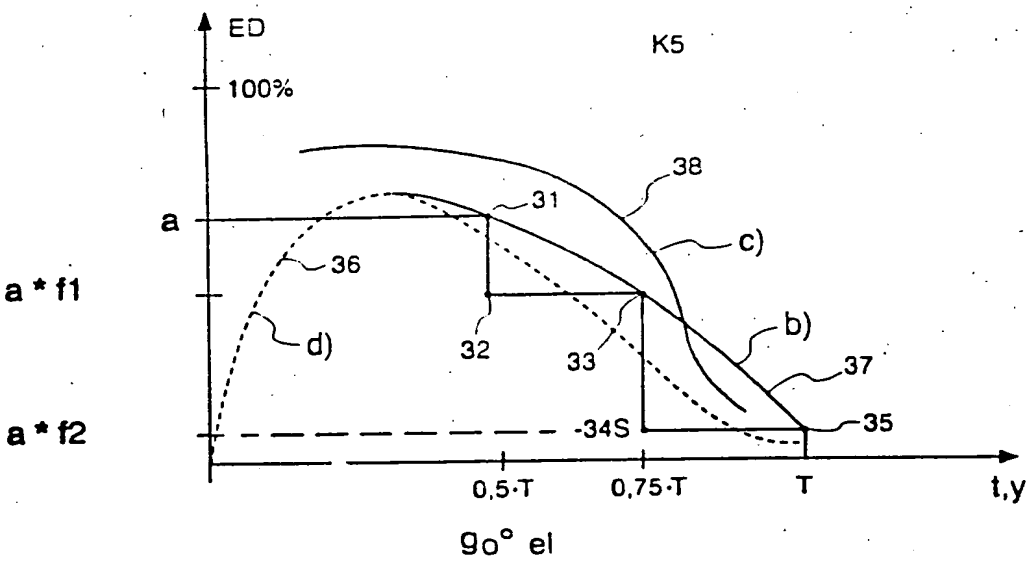


Figure 3

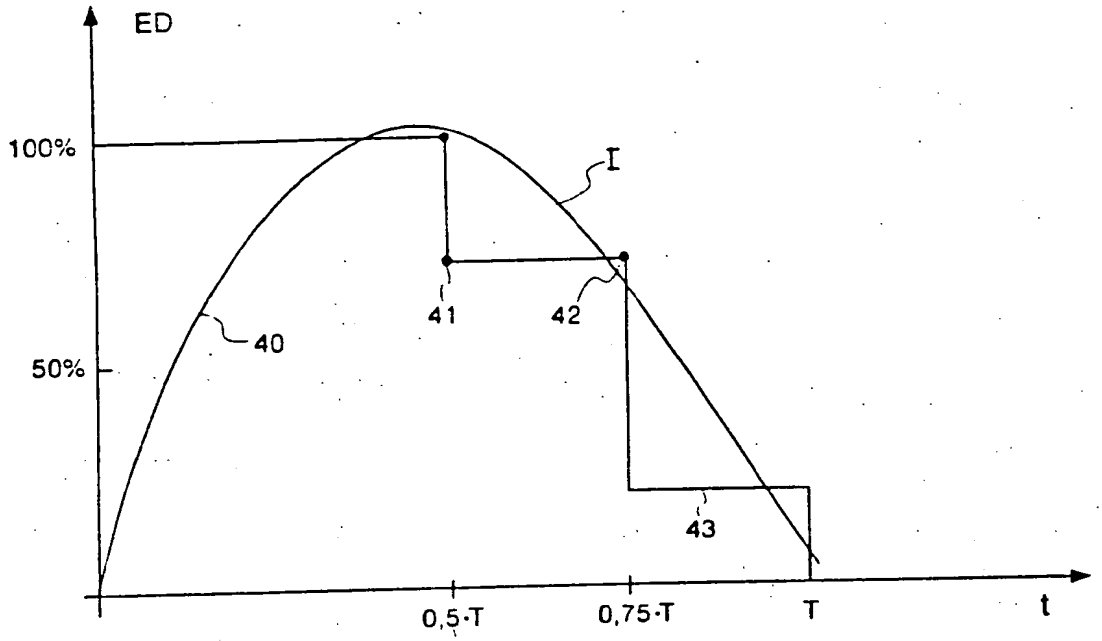


Figure 4

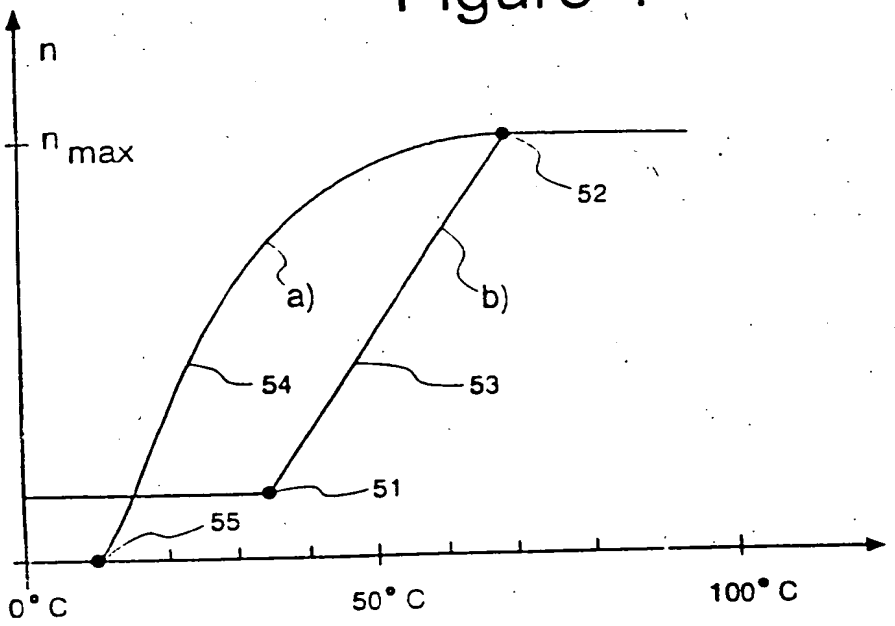


Figure 5

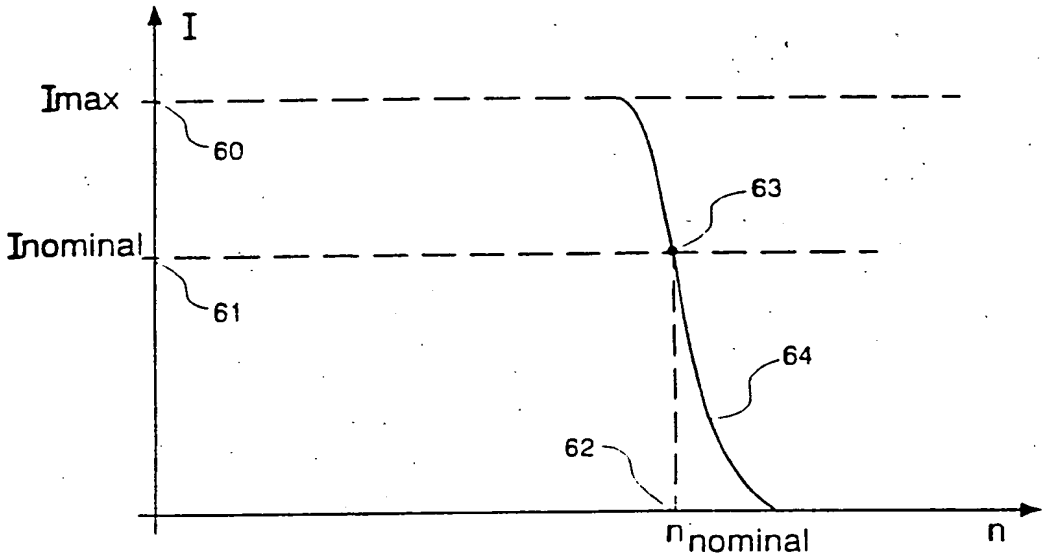


Figure 6

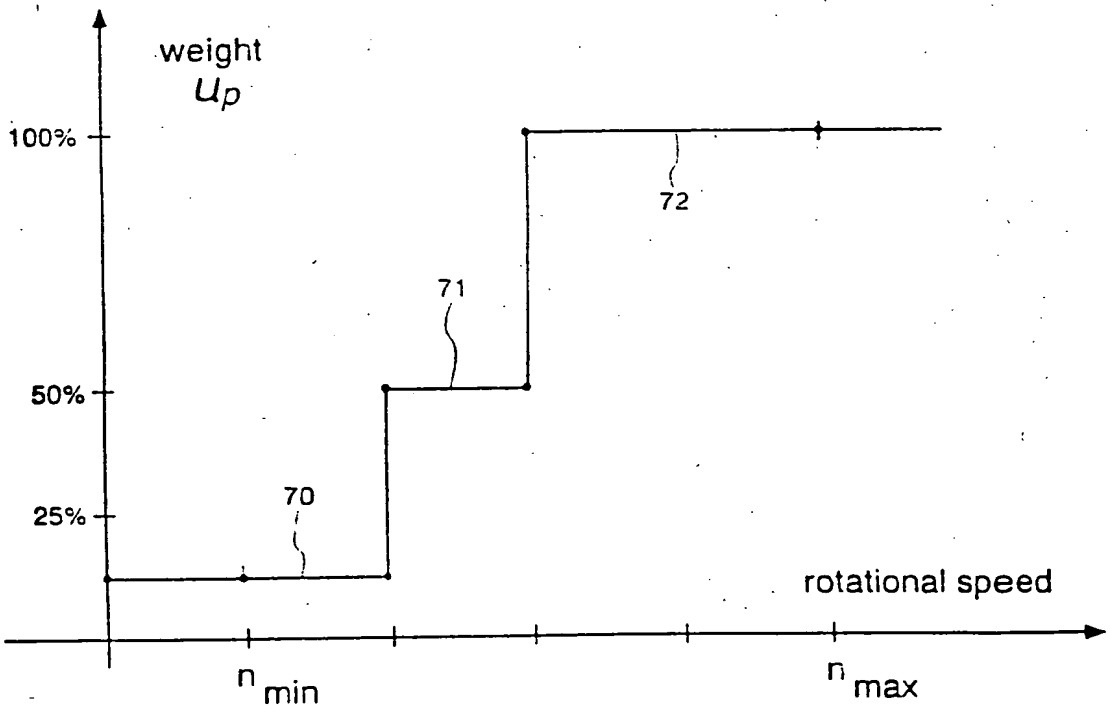


Figure 7

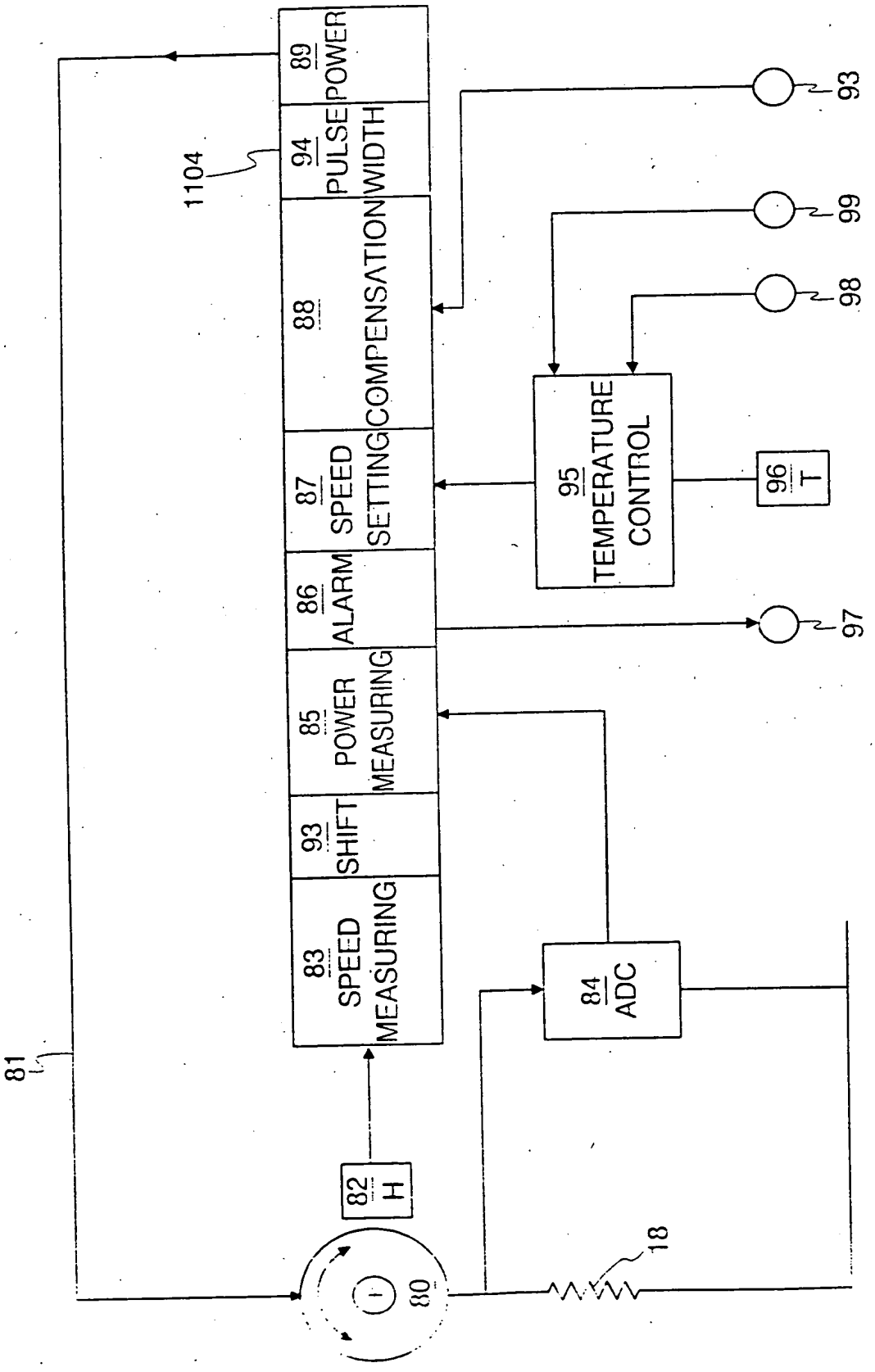

81
80
82 H
83 SPEED MEASURING
93 SHIFT
85 POWER MEASURING
86 ALARM
87 SPEED SETTING
88 COMPENSATION
94 PULSE WIDTH
89 POWER
1104
84 ADC
18
95 TEMPERATURE CONTROL
96 T
93
99
98
97

Figure 8

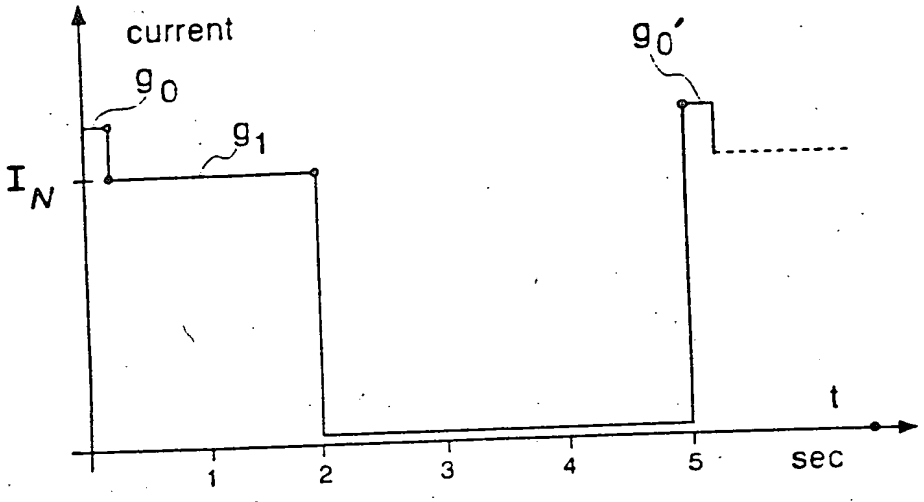


Figure 9

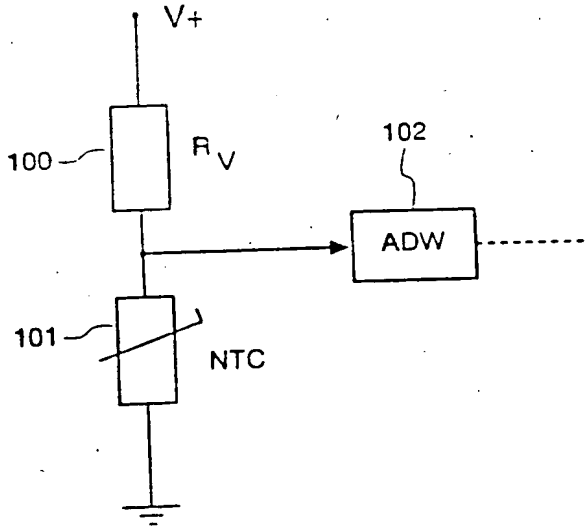


Figure 10

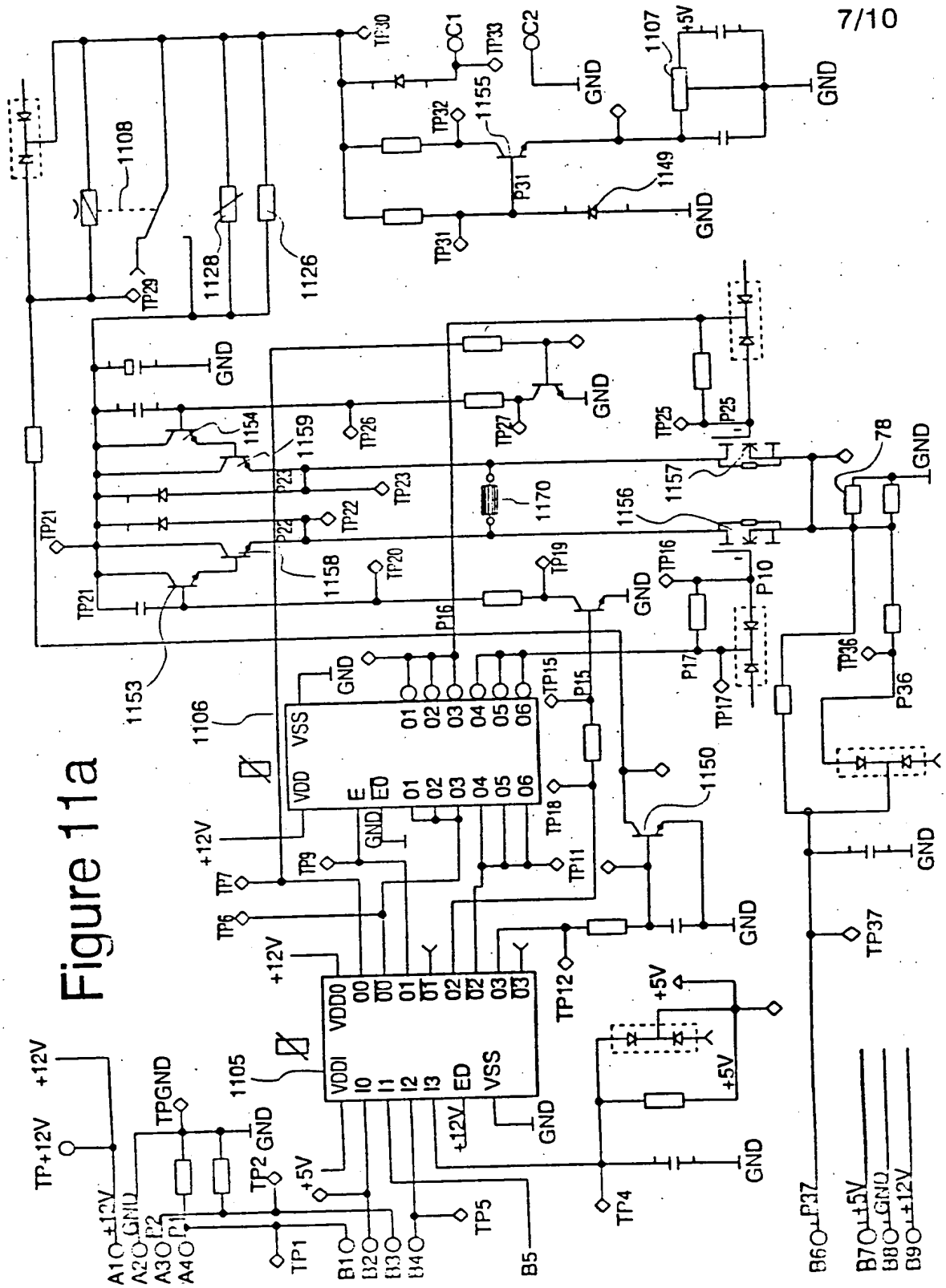
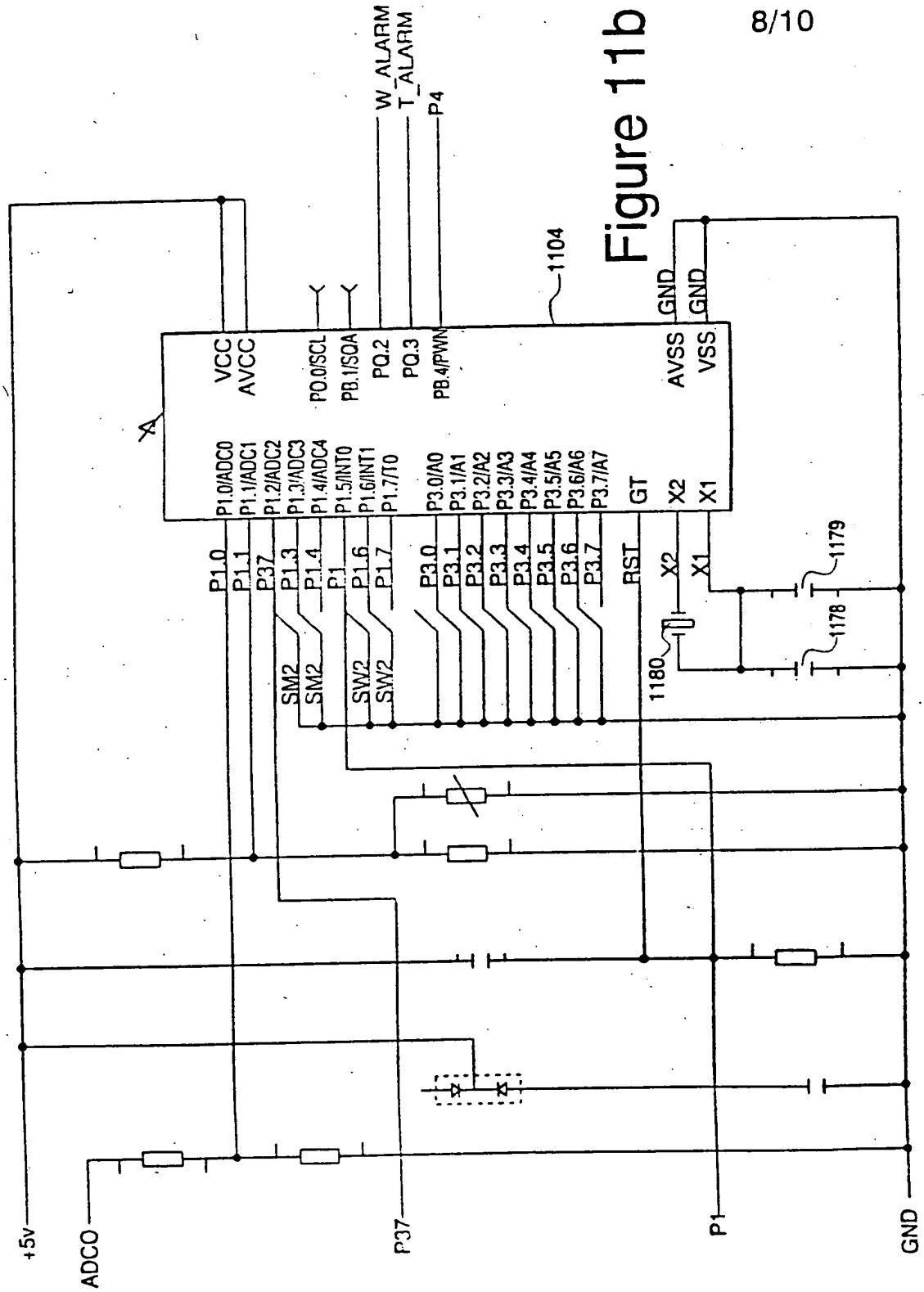

TP30
C1
TP33
C2
1107
+5V
GND
1155
TP32
1108
1149
P31
TP31
TP29
1128
1126
GND
1154
1159
TP26
TP27
TP25
P25
78
P23
TP23
1170
1157
TP21
P22
TP22
1156
1158
TP20
TP19
TP16
P10
P24
TP21
P16
1153
TP15
P15
P17
TP17
TP36
P36
1106
VSS
VDD
E
ED
01
02
03
04
05
06
TP18
1150
+12V
TP9
TP7
TP6
TP11
TP37
VDD0
VDDI
I0
I1
I2
I3
TP12
1105
TPGND
TP2
TP1
TP5
TP4
TP+12V
A1O
A2O
A3O
A4O
B1O
B2O
B3O
B4O
B5
B6O
B7O
B8O
B9O

Figure 11a

Figure 11b


W_ALARM
T_ALARM
P4
1104
VCC
AVCC
P0.0/SCL
PB.1/SQA
PQ.2
PQ.3
PB.4/PWM
AVSS
VSS
GND
GND
P1.0/ADC0
P1.1/ADC1
P1.2/ADC2
P1.3/ADC3
P1.4/ADC4
P1.5/INT0
P1.6/INT1
P1.7/T0
P3.0/A0
P3.1/A1
P3.2/A2
P3.3/A3
P3.4/A4
P3.5/A5
P3.6/A6
P3.7/A7
GT
X2
X1
P1.0
P1.1
P37
P1.3
P1.4
P1
P1.6
P1.7
P3.0
P3.1
P3.2
P3.3
P3.4
P3.5
P3.6
P3.7
RST
X2
X1
1179
1178
1180
SM2
SM2
SW2
SW2
+5v
ADCO
P37
P1
GND

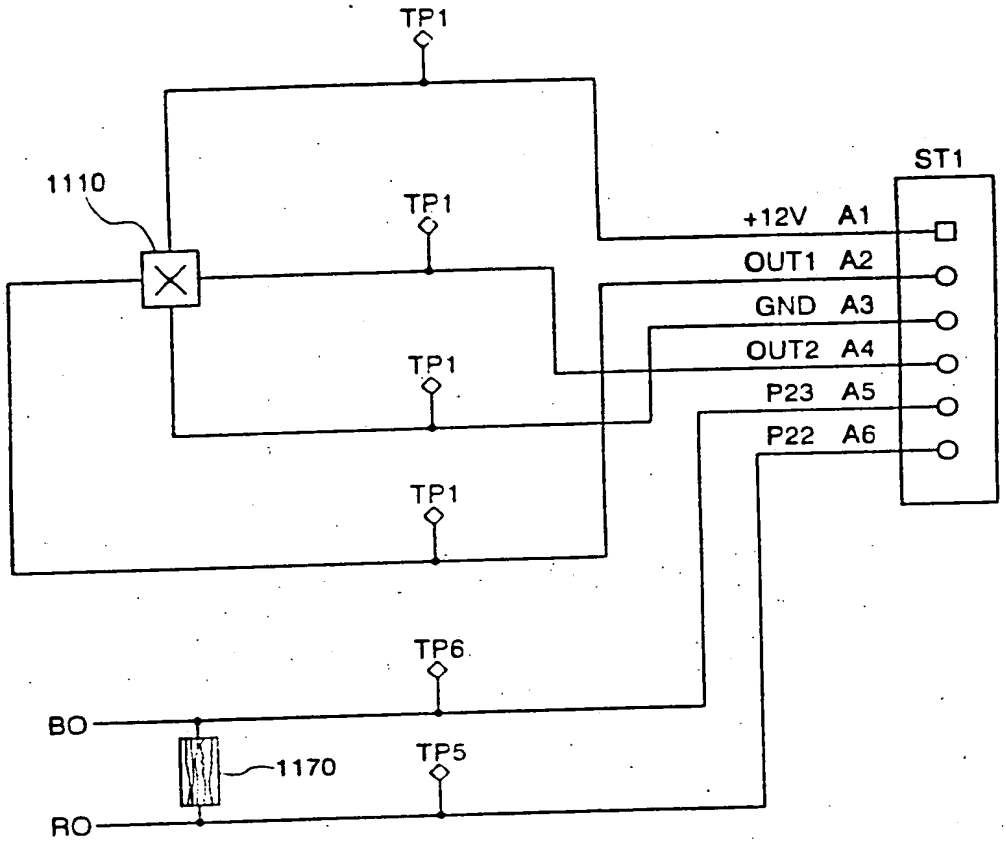
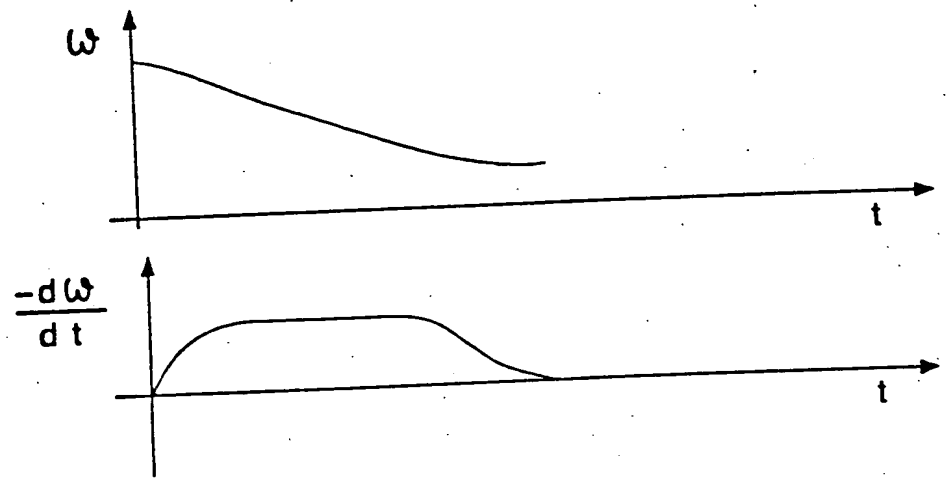

TP1
1110
TP1
ST1
+12V A1
OUT1 A2
GND A3
OUT2 A4
P23 A5
P22 A6
TP1
TP1
TP6
BO
1170
TP5
RO

Figure 11c



$$\varphi_{new} = \omega \cdot t_a + \frac{d\omega}{dt} \cdot t_a^2 + \cdots +$$

(for Fig. 2b)

Figure 12

t_a = current sensing time